Trend Study 16B-6-02

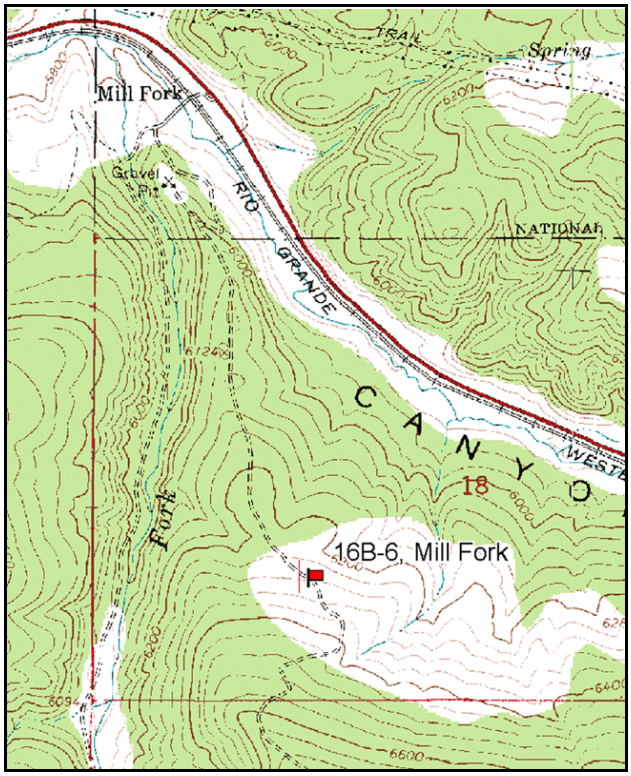
Study site name: Mill Fork . Vegetation type: Big Sagebrush .

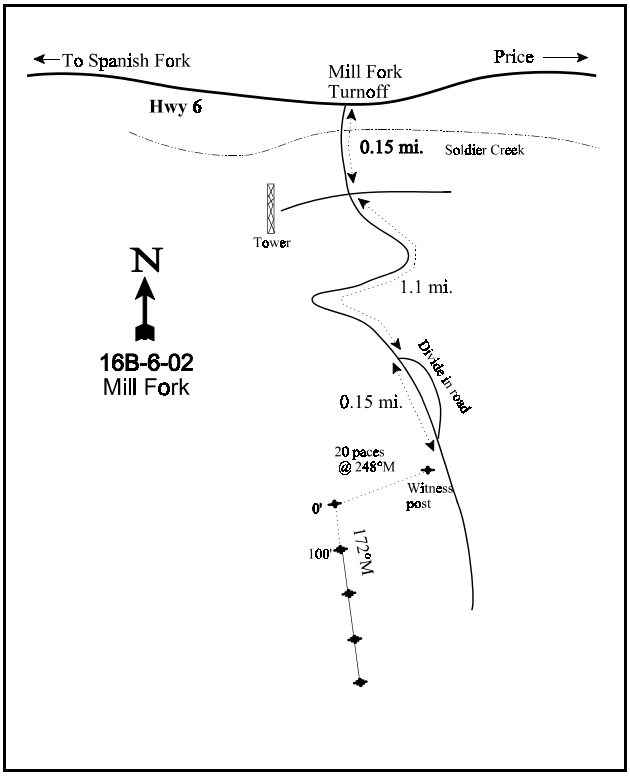
Compass bearing: frequency baseline 172 degrees magnetic.

Frequency belt placement: line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

LOCATION DESCRIPTION

From the Sheep Creek Cafe and Sheep Creek Turnoff on Highway 6, travel east on Highway 6 (toward Price) for 1.9 miles to the Mill Fork turnoff on the south side of the highway. Take this road 0.15 miles through a gate and crossing the river to a fork. Stay left (east) and go up the hill 1.1 miles to a division in the road. Here the dense pinyon/juniper forest opens up into a sagebrush stand. Proceed another 0.15 miles to a witness post on the west side of the road. From the witness post the 0-foot baseline stake is 20 paces away at 248 degrees magnetic. It is marked by browse tag #9091.





Map Name: Mill Fork

Diagrammatic Sketch

Township 10S , Range 6E , Section 18

GPS: NAD 27, UTM 12S 4421861 N 474171 E

DISCUSSION

Mill Fork - Trend Study No. 16B-6

The Division's Mill Fork property is considered important winter range for deer and elk, although the area supports a depleted sagebrush range. Elevation at the site is 6,300 feet with a 10-15% slope on a north by northwest aspect. This same sagebrush community was originally sampled by a line-intercept transect in 1978. The 1978 report identified the sagebrush as basin big sagebrush (*Artemisia tridentata tridentata*), but in 1989 it was classified as mountain big sagebrush (*Artemisia tridentata vaseyana)*. It is likely a hybrid between the 2 subspecies. The sagebrush population on the site is a relatively dense, old stand with low production. Wildlife use of the site has been light for elk and moderate for deer. Pellet group transect data collected in 2002 estimated 18 elk days use/acre (45 edu/ha) and 58 deer days use/acre (144 ddu/ha). Domestic sheep are trailed through the general area during spring and summer, but use by sheep on the site itself is minimal.

Soils have an effective rooting depth estimated at just under 14 inches. Soil texture is a clay and reactivity is neutral (pH of 7.3). Due to minimal understory vegetation and a high proportion of bare soil, erosion tends to be an increasingly negative factor on the site. Soils have little protection, especially in the barren shrub interspaces. An erosion condition class assessment was determined as slight in 2002. Pedestalling and active gullies throughout the site provide evidence that erosion is occurring. Bare soil is high accounting for about 27% of the ground surface during all sampling periods.

Mountain big sagebrush dominates the site, providing at least three-fourths of the total vegetative cover in 1997 and 2002. Sagebrush cover was estimated at 29% in 1997, increasing to 33% in 2002. Sagebrush density is high at about 5,100 plants/acre. Reproduction has steadily declined since the initial reading in 1989. No young plants were sampled in 2002. Decadence has varied between sampling periods. Decadence was high in both 1989 (78%) and 2002 (43%). Both of these readings occurred during periods of drought so these decadence levels are expected as sagebrush plants experience leaf drop and increased crown death during long periods of drought. In 1997, percent decadence was low at only 15%, which incidentally was a year of above normal precipitation throughout the region. Sagebrush vigor has steadily improved with each reading, and hedging has been generally moderate. Annual growth was low in 2002 averaging 1.4 inches. This site would be a good candidate for some type of treatment to reduce the density and canopy cover of sagebrush. This could help stimulate the reproduction of sagebrush and establishment of perennial herbaceous species.

The site supports a variety of other browse, although these species are in limited abundance. Stickyleaf low rabbitbrush had an estimated density of 1,660 plants/acre in 2002, a 23% decrease from 1997 (2,160 plants/acre). Serviceberry and snowberry are also present, providing some additional forage. Juniper has an estimated density of 140 trees/acre using the point-centered quarter method in 2002. This density estimate is somewhat higher than the 1997 estimate of 64 juniper trees/acre. Several young plants were sampled in 2002 increasing the density estimate.

The herbaceous component has become insignificant on the site. Grasses and forbs combine to provided less than 5% total cover in 1997 and 2002. Diversity has been fair in the past, suggesting a higher site potential. Five perennial grass species were encountered producing less than 1% cover in both 1997 and 2002. There is a moderate density of forbs, with none considered as being important. The most common species are longleaf phlox and low penstemon. The understory is being suppressed by an overabundant population of big sagebrush. This community would greatly benefit from some type of treatment to reduce sagebrush density and cover, and add variability to the sagebrush age structure which is represented by only mature and decadent individuals.

1989 APPARENT TREND ASSESSMENT

The vegetation component is best characterized as having a depleted understory, and an overly decadent and unproductive sagebrush population. Conditions are further impacted by poor soil conditions that have substantial erosion.

1997 TREND ASSESSMENT

The soil trend for this site is stable with similar ground cover characteristics compared to 1989. However, conditions are poor with little herbaceous ground cover and gradual erosion. The browse trend is up for the key species, mountain big sagebrush. This is due to a decline in percent decadency from 78% to 15% between 1989 and 1997. Vigor has improved but recruitment is still poor. Density of broom snakeweed declined by 89% since 1989, but stickyleaf low rabbitbrush density increased by 23%. Trend for the herbaceous understory is stable but depleted. Perennial grasses are nearly nonexistent.

TREND ASSESSMENT
soil - stable (3)
browse - up (5)
herbaceous understory - stable (3)

2002 TREND ASSESSMENT

Soil trend is stable, but soils remain in poor condition with a high proportion of bare soil (27%) and very low protective cover from herbaceous species. Erosion is slight. Browse trend is stable. Mountain big sagebrush has increased decadence and low reproduction, but vigor improved and use remains mostly moderate. The vegetation component would greatly benefit from a sagebrush thinning treatment. The herbaceous understory has a slightly downward trend. Grasses are nearly non-existent and sum of nested frequency for perennial forbs declined by nearly half in 2002. Drought coupled with an overly abundant sagebrush stand has severely depressed the understory on this site.

TREND ASSESSMENT
soil - stable (3)
browse - stable (3)
herbaceous understory - slightly down (2)

HERBACEOUS TRENDS --
Herd unit 16B, Study no: 6

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'89	'97	'02	'89	'97	'02	'97	'02
G	Agropyron spicatum	[a]-	[b]22	[b]29	-	10	12	.91	.85
G	Oryzopsis hymenoides	2	1	-	1	1	-	.00	-
G	Poa fendleriana	4	-	-	4	-	-	-	-
G	Sitanion hystrix	2	4	-	1	2	-	.03	-
G	Stipa lettermani	-	3	3	-	1	1	.03	.03
Total for Annual Grasses		0	0	0	0	0	0	0	0
Total for Perennial Grasses		8	30	32	6	14	13	0.99	0.88
Total for Grasses		8	30	32	6	14	13	0.99	0.88

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'89	'97	'02	'89	'97	'02	'97	'02
F	Achillea millefolium	-	4	4	-	1	1	.03	.03
F	Astragalus beckwithii	-	7	1	-	5	1	.10	.00
F	Aster chilensis	34	28	17	14	10	9	.51	.22
F	Astragalus convallarius	$_{b}$43	$_{a}$21	$_{a}$11	23	11	5	.18	.05
F	Astragalus utahensis	2	4	-	1	4	-	.10	-
F	Calochortus nuttallii	$_{a}$1	$_{b}$35	$_{a}$-	1	21	-	.10	-
F	Castilleja spp.	-	2	-	-	2	-	.03	-
F	Chaenactis douglasii	$_{b}$17	$_{b}$28	$_{a}$2	10	12	1	.26	.01
F	Cirsium spp.	2	5	-	1	2	-	.01	-
F	Collinsia parviflora (a)	-	1	-	-	1	-	.00	-
F	Cymopterus spp.	-	7	5	-	4	2	.02	.01
F	Eriogonum brevicaule	1	1	3	1	1	1	.03	.15
F	Erigeron eatonii	-	-	3	-	-	1	-	.00
F	Lomatium spp.	-	7	-	-	4	-	.02	-
F	Machaeranthera canescens	$_{b}$24	$_{ab}$13	$_{a}$6	12	7	3	.03	.04
F	Penstemon caespitosus	$_{a}$-	$_{a}$-	$_{b}$27	-	-	13	-	.80
F	Penstemon humilis	41	40	29	17	19	11	1.59	.85
F	Phlox longifolia	$_{c}$159	$_{b}$106	$_{a}$60	60	41	26	.57	.26
F	Polygonum douglasii (a)	-	3	-	-	1	-	.00	-
F	Taraxacum officinale	3	2	-	1	1	-	.00	-
F	Verbascum thapsus	3	7	-	1	3	-	.04	-
F	Vicia americana	4	4	2	3	2	1	.03	.00
F	Viola spp.	-	4	-	-	2	-	.03	-
Total for Annual Forbs		0	4	0	0	2	0	0.00	0
Total for Perennial Forbs		334	325	170	145	152	75	3.73	2.44
Total for Forbs		334	329	170	145	154	75	3.74	2.44

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --
Herd unit 16B, Study no: 6

Type	Species	Strip Frequency '97	Strip Frequency '02	Average Cover % '97	Average Cover % '02
B	Amelanchier alnifolia	7	5	.36	.03
B	Artemisia tridentata vaseyana	89	89	29.47	33.22
B	Chrysothamnus depressus	3	6	.18	.03
B	Chrysothamnus nauseosus hololeucus	2	5	.00	.09
B	Chrysothamnus viscidiflorus viscidiflorus	44	37	1.15	.49
B	Gutierrezia sarothrae	6	5	.15	.03
B	Juniperus osteosperma	6	4	2.67	3.29
B	Opuntia spp.	1	0	.00	-
B	Symphoricarpos oreophilus	13	17	.68	.21
B	Tetradymia canescens	7	6	.06	.15
Total for Browse		178	174	34.75	37.57

CANOPY COVER -- LINE INTERCEPT
Herd unit 16B, Study no: 6

Species	Percent Cover '97	Percent Cover '02
Amelanchier utahensis	-	.17
Artemisia tridentata vaseyana	-	26.92
Chrysothamnus depressus	-	.07
Chrysothamnus nauseosus hololeucus	-	.33
Chrysothamnus viscidiflorus viscidiflorus	-	.33
Juniperus osteosperma	2.2	4.33
Symphoricarpos oreophilus	-	.50
Tetradymia canescens	-	.42

Key Browse Annual Leader Growth
Herd unit 16B , Study no: 6

Species	Average leader growth (in) '02
Artemisia tridentata vaseyana	3.5

Point-Quarter Tree Data
Herd unit 16B , Study no: 6

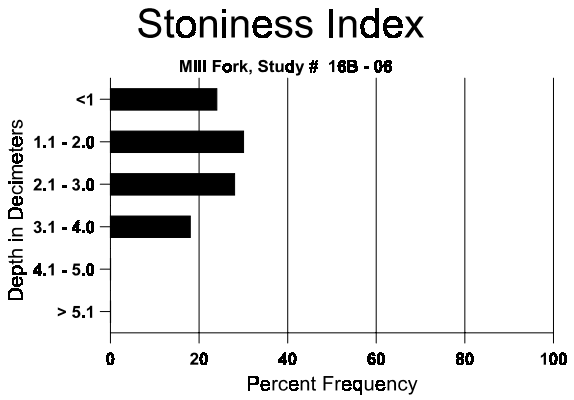
Species	Trees per Acre		Average diameter (in)	
	'97	'02	'97	'02
Juniperus osteosperma	64	140	2.8	4.0

BASIC COVER --
Herd unit 16B, Study no: 6

Cover Type	Nested Frequency		Average Cover %		
	'97	'02	'89	'97	'02
Vegetation	253	205	6.50	35.90	40.29
Rock	130	136	2.50	4.87	4.59
Pavement	243	244	15.25	6.28	5.86
Litter	390	379	47.25	42.78	38.99
Cryptogams	82	73	2.00	2.34	3.95
Bare Ground	272	268	26.50	27.07	27.53

SOIL ANALYSIS DATA --
Herd Unit 16B, Study no: 06, Mill Fork

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
13.9	42.8 (15.0)	7.3	20.7	22.7	56.6	2.8	12.3	83.2	.5



PELLET GROUP FREQUENCY --
Herd unit 16B, Study no: 6

Type	Quadrat Frequency		Pellet Transect	
	'97	'02	Pellet Groups per Acre ⁄02	Days Use per Acre (ha) ⁄02
Rabbit	2	5	-	-
Elk	11	3	235	18 (45)
Deer	26	30	757	58 (144)

BROWSE CHARACTERISTICS --
Herd unit 16B, Study no: 6

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Amelanchier alnifolia																		
Y	89	-	-	2	-	-	-	-	-	-	2	-	-	-	133			2
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	4	2	-	1	-	-	-	-	-	7	-	-	-	140	23	25	7
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0	15	17	0
D	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	-	3	1	-	-	-	1	-	-	1	-	-	4	100			5

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'89	00%	100%	00%	+ 5%
'97	29%	00%	00%	-14%
'02	50%	17%	67%	

Total Plants/Acre (excluding Dead & Seedlings)				
'89	133	Dec:		0%
'97	140			0%
'02	120			83%

Artemisia tridentata vaseyana																		
S	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
	02	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
Y	89	7	1	-	-	-	-	-	-	-	8	-	-	-	533			8
	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	89	8	1	-	-	-	-	-	-	-	9	-	-	-	600	32	36	9
	97	29	120	5	3	-	-	-	-	-	157	-	-	-	3140	34	56	157
	02	77	46	23	-	-	-	-	-	-	146	-	-	-	2920	31	40	146
D	89	11	45	4	-	-	-	-	-	-	39	-	-	21	4000			60
	97	8	19	-	-	-	-	-	-	-	5	-	-	22	540			27
	02	71	29	7	1	-	-	-	-	-	88	-	-	20	2160			108
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	580			29
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	1100			55

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'89	61%	05%	27%	-28%
'97	75%	03%	12%	+27%
'02	30%	12%	08%	

Total Plants/Acre (excluding Dead & Seedlings)				
'89	5133	Dec:		78%
'97	3700			15%
'02	5080			43%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Chrysothamnus depressus																		
M	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	3	-	-	1	-	-	-	-	-	4	-	-	-	80	11	11	4
	02	5	-	-	-	-	-	-	-	-	5	-	-	-	100	3	9	5
D	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	4	-	-	-	-	-	1	-	-	1	-	-	4	100			5

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'89	00%	00%	00%	
'97	00%	00%	00%	+60%
'02	00%	00%	40%	

Total Plants/Acre (excluding Dead & Seedlings)				
'89	0	Dec:		0%
'97	80			0%
'02	200			50%

Chrysothamnus nauseosus hololeucus																		
Y	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	1	-	-	1	-	-	-	20			1
	02	1	-	-	2	-	-	-	-	-	3	-	-	-	60			3
M	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	34	35	0
	02	4	-	-	-	-	-	-	-	-	4	-	-	-	80	10	12	4
D	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	1	-	-	-	-	-	-	-	-	-	-	-	1	20			1
	02	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'89	00%	00%	00%	
'97	00%	00%	50%	+75%
'02	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'89	0	Dec:		0%
'97	40			50%
'02	160			13%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Chrysothamnus viscidiflorus viscidiflorus																		
S	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	89	14	-	-	2	-	-	1	-	-	17	-	-	-	1133			17
	97	28	-	-	-	-	-	-	-	-	28	-	-	-	560			28
	02	1	-	-	1	-	-	-	-	-	2	-	-	-	40			2
M	89	6	-	-	3	-	-	2	-	-	11	-	-	-	733	13	14	11
	97	67	-	-	13	-	-	-	-	-	80	-	-	-	1600	22	13	80
	02	70	-	-	4	-	-	-	-	-	74	-	-	-	1480	8	10	74
D	89	6	-	-	-	-	-	-	-	-	6	-	-	-	400			6
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	7	-	-	-	-	-	-	-	-	6	-	-	1	140			7
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'89	00%	00%	00%	- 5%
'97	00%	00%	00%	-23%
'02	00%	00%	01%	

Total Plants/Acre (excluding Dead & Seedlings)				
'89	2266	Dec:		18%
'97	2160			0%
'02	1660			8%

Gutierrezia sarothrae																		
S	89	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	89	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	02	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M	89	21	-	-	-	-	-	-	-	-	21	-	-	-	1400	10	13	21
	97	6	-	-	1	-	-	-	-	-	7	-	-	-	140	9	9	7
	02	5	-	-	-	-	-	-	-	-	5	-	-	-	100	9	10	5
D	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	-	-	-	1	-	-	-	-	-	1	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'89	00%	00%	00%	-89%
'97	00%	00%	00%	-13%
'02	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'89	1466	Dec:		0%
'97	160			0%
'02	140			14%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Juniperus osteosperma																		
S	89	1	-	-	-	-	-	1	-	-	2	-	-	-	133			2
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	3	-	-	-	-	-	-	-	-	3	-	-	-	60			3
	02	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	4	-	-	-	-	-	-	-	-	3	-	-	1	80	161	115	4
	02	2	-	-	-	-	-	1	-	-	3	-	-	-	60	-	-	3

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'89	00%	00%	00%	
'97	00%	00%	14%	-43%
'02	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'89	0	Dec:	-
	'97	140		-
	'02	80		-

Mahonia repens																		
M	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	5	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'89	00%	00%	00%	
'97	00%	00%	00%	
'02	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'89	0	Dec:	-
	'97	0		-
	'02	0		-

Opuntia spp.																		
Y	89	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	1	0
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
D	89	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'89	00%	00%	00%	-85%
'97	00%	00%	00%	
'02	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'89	132	Dec:	50%
	'97	20		0%
	'02	0		0%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Quercus gambelii																		
S	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
% Plants Showing		Moderate Use		Heavy Use		Poor Vigor									%Change			
	'89	00%		00%		00%												
	'97	00%		00%		00%												
	'02	00%		00%		00%												
Total Plants/Acre (excluding Dead & Seedlings)													'89		0	Dec:		-
													'97		0			-
													'02		0			-
Symphoricarpos oreophilus																		
Y	89	-	-	-	1	-	-	-	-	-	1	-	-	-	66			1
	97	3	-	-	1	-	-	-	-	-	4	-	-	-	80			4
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	89	-	-	-	-	2	-	-	-	-	2	-	-	-	133	13	19	2
	97	16	-	-	-	-	-	-	-	-	16	-	-	-	320	16	26	16
	02	19	-	-	-	-	-	-	-	-	19	-	-	-	380	13	24	19
D	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	4	-	-	-	-	-	-	-	-	4	-	-	-	80			4
% Plants Showing		Moderate Use		Heavy Use		Poor Vigor									%Change			
	'89	67%		00%		00%									+50%			
	'97	00%		00%		00%									+13%			
	'02	00%		00%		00%												
Total Plants/Acre (excluding Dead & Seedlings)													'89		199	Dec:		0%
													'97		400			0%
													'02		460			17%
Tetradymia canescens																		
Y	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	3	-	-	-	-	-	-	-	-	3	-	-	-	60			3
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	89	1	-	-	-	-	-	-	-	-	1	-	-	-	66	8	4	1
	97	13	-	-	-	-	-	-	-	-	12	1	-	-	260	8	6	13
	02	9	-	-	-	-	-	-	-	-	9	-	-	-	180	8	8	9
D	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
% Plants Showing		Moderate Use		Heavy Use		Poor Vigor									%Change			
	'89	00%		00%		00%									+79%			
	'97	00%		00%		00%									-31%			
	'02	00%		00%		00%												
Total Plants/Acre (excluding Dead & Seedlings)													'89		66	Dec:		0%
													'97		320			0%
													'02		220			18%